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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/493,210    01/28/00    NAGAI

A    503.35443VX1

EXAMINER

020457    MM91/0424  
ANTONELLI TERRY STOUT AND KRAUS  
SUITE 1800  
1300 NORTH SEVENTEENTH STREET  
ARLINGTON VA 22209

CRUZ, I	
ART UNIT	PAPER NUMBER

2815  
DATE MAILED:  
04/24/01

*5*

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No. 09/493,210	Applicant(s) NAGAI ET AL.	
	Examiner Lourdes C. Cruz	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2000.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- |                                                                                                                   |                                                                              |
|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                      | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s).        |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3,4,6</u> . | 20) <input type="checkbox"/> Other:                                          |

### DETAILED ACTION

This Office Action is in response to an Application filed 1-28-00.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Sim et al., Yoshida et al. and Hazaki et al.

Kim discloses (See Figures 2 and 3):

- A semiconductor element 15 with terminals 17
- An adhesive film 24

Kim does not show an adhesive layer comprising three layers having a porous support layer and two adhesive layers which are respectively applied onto both sides of said support layer.

Sim et al. teaches (See Fig. 2) to use a support layer 62, a buffer layer 60, layer 62 being surrounded by adhesive layers 64 to absorb stress from the chip (Col. 1, lines 20+).

Hazaki et al. teaches (Figure 2) to use a porous resin in a buffer layer 5 to prevent cracking (Col. 2, lines 7+).

Yoshida et al. (See Col 12, lines 20+) teaches a 3D polyimide structure for improving its resistance to heat.

It would have been obvious at the time the invention was made to use a layer with a support layer of polyimide surrounded by adhesive layers as taught by Sim et al., to use the three dimensional structure of polyimide as taught by Yoshida et al., and a porous resin as taught by Hazaki et al. in the device of Kim to absorb stress from the chip, to improve the polyimide's heat resistance and to prevent cracking.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Sim et al., Yoshida et al., and Hazaki et al., as applied to claim 1 above, and further in view of Fujimoto et al.

See that Kim in view of Sim et al., Yoshida et al., and Hazaki et al. disclose all the structural limitations of claim 1. However, the combination of the above fails to disclose a polytetrafluoroethylene layer. Fujimoto teaches this fluorine resin to permit high-density wiring at a low dielectric constant (Col.2, 30+). It would have been obvious at the time the invention was made to combine the teachings of Fujimoto to the device of Kim in view of Sim et al., Yoshida et al., and Hazaki et al. to permit high density wiring while providing a low dielectric constant.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

Art Unit: 2815

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 09/092138. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim a semiconductor device with a porous layer consisting of a support layer with adhesive layers on both sides of the support layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 707-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.

Application/Control Number: 09/493,210  
Art Unit: 2815

Page 5

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Lourdes Cruz  
April 18, 2001

Lourdes C. Cruz  
Examiner  
Art Unit 2815



**EDDIE LEE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**